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REMARKS

Claims 1-8 and 13-24 will be pending upon entry of the present amendment. Claims 1, 3, 5, and 13-14 are being amended. Claims 9-12 were previously cancelled. Claims 21-24 are newly presented.

Drawings – Figure 5 is being newly submitted and one sheet of drawings is presented herewith for approval. The new Figure 5 is a flow diagram showing several steps of a method according to an embodiment of the invention.

The drawings were objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims. The new Figure 5 is a flow diagram showing all of the steps mentioned by the Examiner. All of the steps were described in the original specification and claims, and thus, no new matter is being presented.

Claim 14 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 14 is being amended to refer to the second spacer, rather than the first spacer, acting as a mask for the second peripheral portion. As a result, amended claim 14 particularly points out and distinctly claims the invention.

Claims 1-4, 7-8, and 13-20 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,994,202 to Gambino et al. (“Gambino”).

Gambino does not disclose the invention recited in claims 1-4 and 7-8, as amended. Amended claim 1 recites a method that includes: 1) implanting a dopant of a first type only to provide a channel zone of a MOS transistor in the active area, whereby the implantation in an area located under the spacer is less deep than in the rest of the active area; and 2) forming a conductive gate on the active area after the implanting step without implanting any dopants of other than the first type in the active area prior to forming the conductive gate.

Gambino does not disclose the implanting and forming steps which together require implanting only one type of dopant prior to forming a conductive gate on the active area. Instead, Gambino performs first and second implants of opposite conductivity types, as shown in Figs. 2D and 2E. The two implant steps of Gambino enable Gambino to achieve a higher effective doping of P-type (boron) ions directly under the spacers 16 than in the central area between the spacers. In contrast, the claimed invention specifies that “the implantation in an

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area located under the spacer is less deep than in the rest of the active area.” Accordingly, Gambino does not anticipate amended claims 1-4 and 7-8.

Gambino also does not disclose the invention recited in claims 13-20, as amended. Amended claim 13 recites a method that includes forming a first spacer with a concave surface adjacent to the first insulation area and above the first peripheral portion of the substrate region. Gambino does not disclose forming such a spacer with a concave surface. Instead, Gambino requires the spacer to be convex so that none of the N-type (arsenic) ions are implanted into the corner regions 25 adjacent to the insulators 18a-c. Gambino reserves those corner regions 25 for the P-type (boron) ions that are implanted in the second implant step in order to adjust the threshold of the MOS transistor being made. In contrast, the concave spacer of the claimed invention enables the threshold voltage of a parasitic transistor, formed adjacent to the insulating area, to be adjusted without requiring two implant steps of dopants of opposite conductivity type. Accordingly, Gambino does not anticipate claims 13-20.

Claims 1 and 5-6 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,077,748 to Gardner et al. (“Gardner”).

Like Gambino, Gardner does not disclose the invention recited in claims 1 and 5-6, as amended. Amended claim 1 recites forming a conductive gate after forming the first spacer and after implanting the dopant to form the active area. In contrast, Gardner forms a conductive gate 70 before forming any spacer and before implanting any dopants. Accordingly, Gardner does not anticipate claims 1 and 5-6.

New claims 21-24 also are not anticipated by the cited prior art. New claim 21 recites a method that includes: 1) performing, with the spacer positioned above the substrate, a high-energy first implant of first dopant type into the substrate region to create a well that extends in the substrate at a bottom side of the first insulation area; and 2) performing, with the spacer positioned above the substrate, a low-energy second implant of the first dopant type into the substrate region to create the doped active area.

Neither Gambino nor Gardner teaches performing first and second implants with a spacer in place above a substrate. Gambino removes the spacer 16 before implanting the P-type boron ions in Fig. 2E. Moreover, the first and second implants of Gambino are of opposite

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conductivity types rather than both being of the same dopant type as specified in claim 21. Gardner performs the implant of area 76 before the spacers 84 are formed. In addition, neither Gambino nor Gardner teaches performing a high-energy first implant that forms a well that extends at a bottom side of the first insulation area. As shown in Figure 2E of Gambino and 2I of Gardner, none of the implants of Gambino and Gardner extends at the bottom of the oxide regions of the respective devices. Accordingly, new claims 21-24 are not anticipated by the cited prior art.

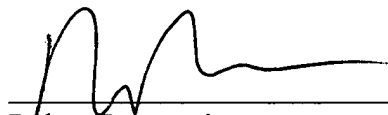
The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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Enclosure:

Postcard
Figure 5

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